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| Project Number:  | 00085154 |
| Project Title:  | Development of Functional ultra-high stearic acid soybean germplasms  |
| Organization:  | University of Missouri |
| Project Lead Name: | Feng Lin, PhD |
| Reporting Period:*Please select the appropriate reporting period for this report.* |  [x]  December [ ]  March [ ]  June [ ]  September [ ]  Final |
| The information included in this detailed report should reflect quantifiable results that can be used to evaluate and measure project success.If Progress Report – What key activities were undertaken and what were the key accomplishments during this reporting period? List each key deliverable from the proposal and describe progress made (or not made) toward achieving it, including metrics were appropriate.If Final Report – What were the key accomplishments during the life of the project? List each deliverable from the proposal and describe progress made (or not made) toward achieving it, including metrics where appropriate. |
| Our team is actively engaged in the development of high-yielding lines, with elevated levels of high stearic acid content.**2024 AYT.** One advanced breeding line, S22-23421HS, was entered in the 2024 advanced yield trial and will be advanced to the regional trial in 2025. The fatty acid content of this line will be analyzed for validation. **2024 PYT.** Three preliminary breeding lines belonging to MG IV Early and MG IV Late were planted at Lee Farm, Portageville, MO. Currently, data analysis is still ongoing, and the breeding lines identified for the stearic acid content and yield performance will be advanced to AYT in 2025.**2024 Progeny rows.** A total of 21 breeding lines were selected from the progeny rows, considering their maturity and phenotypic characteristics. The selected breeding lines exhibit a stearic acid content that ranges from 8.2% - 21.9% The selected breeding lines are set to be included to PYT in 2025.**2024 Population development.** Four bi-parental populations for increasing stearic acid content were sent to the Costa Rica winter nursery for generation advancement from the F1 to the F4 generation and will be planted in our progeny rows in 2025 in Portageville, MO.**2024 New crosses.** The F1 seeds derived from the new crosses have already been sent to Costa Rica for the generation and advancement of the population.  |